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TECHNICAL REPORT

For The

Cargo Movement Operations System (CMOS)

Review of Final System/Segment Specification

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An Employee-Owned Company

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TECHNICAL REPORT

For The

Cargo Movement Operations System (CMOS)

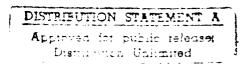Review of Final System/Segment Specification

1 December 1989

Prepared under

Contract Number F11624-88-D-0001/6K12
CDRL #A004-12

Prepared for

Standard Systems Center (SSC)
Deputy Chief of Staff for Acquisition
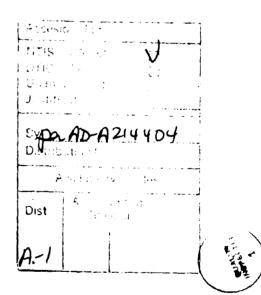Cargo Movement Operations System Division
Gunter AFB, AL 36114

Prepared by

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O'Fallon, IL 62269

SECTION I.

INTRODUCTION. The purpose of this Technical Report is to review the
Final System/Segment Specification, CDRL A001-03, which has been produced for
the Government by Evaluation Research Corporation. The results are provided
in the form of Data Item Discrepancy Worksheets as requested by the CMOS
Program Office.

SUMMARY. Not Used.

CONCLUSION. Not Used.

SECTION II.

RESULTS. The SAIC analysis is provided in the attached Data Item Description
Worksheets.

ORIGINATOR CONTROL NUMBER: SSS-0001
TECH OFFICE CONTROL NUMBER:

DATA ITEM DISCREPANCY WORKSHEET

CDRL NUMBER: A001-03   DATE: 12/01/89

ORIGINATOR NAME: Gerald T. Love   OFFICE SYMBOL: SAIC

TELEPHONE NUMBER: 272-2999

SUBSTANTIVE: X   EDITORIAL:

PAGE NUMBER: 14   PARA. NUMBER: 3.1.4

COMMENT OR RECOMMENDED CHANGE:
The Interface Requirements Specification should be referred to when listing
external system interfaces instead of the External Interface Requirements Data
in Appendix B of the RFP.   This comment applies to all subsequent interface
references.

RATIONALE:
The information in Appendix B has been updated and renamed the Interface
Requirements Specification IAW DoD STD 2167A.

DISPOSITION: ACCEPT [ ]   REJECT [ ]

ORIGINATOR CONTROL NUMBER: SSS-0002
TECH OFFICE CONTROL NUMBER:

DATA ITEM DISCREPANCY WORKSHEET

CDRL NUMBER: A001-03   DATE: 12/01/89

ORIGINATOR NAME: Gerald T. Love   OFFICE SYMBOL: SAIC

TELEPHONE NUMBER: 272-2999

SUBSTANTIVE: X   EDITORIAL:

PAGE NUMBER: 17,18   PARA. NUMBER: Figure 3.1.4.6a and 3.1.4.6b

COMMENT OR RECOMMENDED CHANGE:
Add the words "Using the Protocol Converter" to the title of Figure 3.1.4.6a.
Add the words "Using ICI" to the title of Figure 3.1.4.6b.

RATIONALE:
The two figures have the same title; yet, they depict different methods of
accomplishing the interface.

DISPOSITION: ACCEPT [ ]   REJECT [ ]

ORIGINATOR CONTROL NUMBER: SSS-0003
OFFICE CONTROL NUMBER:

DATA ITEM DISCREPANCY WORKSHEET

CDRL NUMBER: A001-03   DATE: 12/01/89

ORIGINATOR NAME: Vivian L. Martin   OFFICE SYMBOL: SAIC

TELEPHONE NUMBER: 272-2999

SUBSTANTIVE: X   EDITORIAL:

PAGE NUMBER: 24   PARA. NUMBER: 3.2.1.1.1.27

COMMENT OR RECOMMENDED CHANGE:
This paragraph states that 'a block of controlled serial numbers shall be
entered periodically by the Surface Freight PC workstation operator.' Manual
input of these controlled numbers will make them subject to many errors. A
first and last number should be entered and the others calculated by CMOS.

RATIONALE:
This is a good opportunity to reduce data input errors.

DISPOSITION: ACCEPT [ ]   REJECT [ ]

ORIGINATOR CONTROL NUMBER: SSS-0004
OFFICE CONTROL NUMBER:

DATA ITEM DISCREPANCY WORKSHEET

CDRL NUMBER: A001-03   DATE: 12/01/89

ORIGINATOR NAME: Gerald T. Love   OFFICE SYMBOL: SAIC

TELEPHONE NUMBER: 272-2999

SUBSTANTIVE: X   EDITORIAL:

PAGE NUMBER: 24   PARA. NUMBER: 3.2.1.1.1.29

COMMENT OR RECOMMENDED CHANGE:
Section 3.2.1.1.1, titled General Systems Functions, lists capabilities that
are later discussed within the Functional Requirements areas. Neither the
Frustrated Cargo Record nor frustrated cargo procedures, in general, are
discussed in the air or surface freight sections.

RATIONALE:
The oversight prevents frustrated cargo activities from being identified.

DISPOSITION: ACCEPT [ ]   REJECT [ ]

DATA ITEM DISCREPANCY WORKSHEET

CDRL NUMBER: A001-03   DATE: 12/01/89

ORIGINATOR NAME: Gerald T. Love   OFFICE SYMBOL: SAIC

TELEPHONE NUMBER: 272-2999

SUBSTANTIVE: X   EDITORIAL:

PAGE NUMBER: 1) 33   PARA. NUMBER: 3.2.1.2.1.3.9
             2) 33   3.2.1.2.1.3.10.1
             3) 36   3.2.1.2.2.3.3
             4) 36   3.2.1.2.2.3.5

COMMENT OR RECOMMENDED CHANGE:
The shipment handling discussion uses the terms "Shipment Record" (ref. 1.),
"Document Record" (ref. 2.), and "TCN Record" (ref. 3. and 4.).   The practice
is present throughout the document. The standard term adopted in other
documents should be used in the SSS.

RATIONALE:
The interchangeable use of these phrases is confusing.

DISPOSITION: ACCEPT [ ]   REJECT [ ]

DATA ITEM DISCREPANCY WORKSHEET

CDRL NUMBER: A001-03   DATE: 12/01/89

ORIGINATOR NAME: Gerald T. Love   OFFICE SYMBOL: SAIC

TELEPHONE NUMBER: 272-2999

SUBSTANTIVE: X   EDITORIAL:

PAGE NUMBER: 37   PARA. NUMBER: 3.2.1.2.2.3.9.

COMMENT OR RECOMMENDED CHANGE:
Add the words "to the overseas Water Clearance Authority," to the last line in
the paragraph.

RATIONALE:
Makes the surface export sentence consistent with the air export sentence.

DISPOSITION: ACCEPT [ ]   REJECT [ ]

DATA ITEM DISCREPANCY WORKSHEET

CDRL NUMBER: A001-03   DATE: 12/31/89

ORIGINATOR NAME: Gerald T. Love   OFFICE SYMBOL: SAIC

TELEPHONE NUMBER: 272-2999

SUBSTANTIVE: EDITORIAL: X

PAGE NUMBER: 39   PARA. NUMBER: 3.2.1.2.3.2.5.

COMMENT OR RECOMMENDED CHANGE:
The introductory paragraph does not lead into the subparagraph. Moreover,
line 10 and line 11 are the same.

RATIONALE:
N/A

DISPOSITION: ACCEPT [ ] REJECT [ ]

DATA ITEM DISCREPANCY WORKSHEET

CDRL NUMBER: A001-03   DATE: 12/01/89

ORIGINATOR NAME: Gerald T. Love   OFFICE SYMBOL: SAIC

TELEPHONE NUMBER: 272-2999

SUBSTANTIVE: X   EDITORIAL:

PAGE NUMBER: 40   PARA. NUMBER: 3.2.1.2.3.3

COMMENT OR RECOMMENDED CHANGE:
The capability to maintain a consignee record is shown as a system function
(para. 3.2.1.1.1.15) and as a surface freight function (para. 3.2.1.2.4.3.4)
but not an air freight function.

RATIONALE:
Since the pattern is to repeat all system capabilities in both the System
Functions area and the Functional Requirements areas, the consignee records
should be added to air freight.

DISPOSITION: ACCEPT [ ] REJECT [ ]

DATA ITEM DISCREPANCY WORKSHEET

CDRL NUMBER: A001-03   DATE: 12/31/89

ORIGINATOR NAME: Gerald T. Love   OFFICE SYMBOL: SAIC

TELEPHONE NUMBER: 272-2999

SUBSTANTIVE: EDITORIAL: X

PAGE NUMBER: 39   PARA. NUMBER: 3.2.1.2.3.2.6 and 3.2.1.2.3.2.7
             46   3.2.1.2.4.2.6(a) and 3.2.1.2.4.2.6.(b)

COMMENT OR RECOMMENDED CHANGE:
These paragraphs cover the same material but the paragraph numbering and
titles are not consistent.

RATIONALE:
N/A

DISPOSITION: ACCEPT [ ] REJECT [ ]

DATA ITEM DISCREPANCY WORKSHEET

CDRL NUMBER: A001-03   DATE: 12/01/89

ORIGINATOR NAME: Gerald T. Love   OFFICE SYMBOL: SAIC

TELEPHONE NUMBER: 272-2999

SUBSTANTIVE: X   EDITORIAL:

PAGE NUMBER: 39   PARA. NUMBER: 3.2.1.2.3.2.6

COMMENT OR RECOMMENDED CHANGE:
Once a shortage is recognized, that information needs to be passed to the data
base to reconcile the shipment files.

RATIONALE:
The paragraph stops short of resolving the disparity in the record caused by a
short shipment.

DISPOSITION: ACCEPT [ ]   REJECT [ ]

DATA ITEM DISCREPANCY WORKSHEET

CDRL NUMBER: A001-03   DATE: 12/01/89

ORIGINATOR NAME: Gerald T. Love   OFFICE SYMBOL: SAIC

TELEPHONE NUMBER: 272-2999

SUBSTANTIVE: X   EDITORIAL:

PAGE NUMBER: 43   PARA. NUMBER: 3.2.1.2.3.3.7.4

COMMENT OR RECOMMENDED CHANGE:
The reference in line 9 is incorrect. The correct references are:
            Air Manifest to ADAM III   Table 3.13.2c
            Air Manifest to ETADS   Table 3.11.2d
            Air Manifest to SC&D   Table 3.12.2k

RATIONALE:
The reference cited pertains to CMOS transmitting the Air Manifest Prime TCMD
to the Stock Control and Distribution System.

DISPOSITION: ACCEPT [ ] REJECT [ ]

DATA ITEM DISCREPANCY WORKSHEET

CDRL NUMBER: A001-03   DATE: 12/01/89

ORIGINATOR NAME: Gerald T. Love   OFFICE SYMBOL: SAIC

TELEPHONE NUMBER: 272-2999

SUBSTANTIVE: X   EDITORIAL:

PAGE NUMBER: 43   PARA. NUMBER: 3.2.1.2.3.3.7.5
             51   3.2.1.2.4.3.20

COMMENT OR RECOMMENDED CHANGE:
The mechanism and timing for generating and transmitting the records and data
accompanying each shipment is not consistent between air freight and surface
freight.

RATIONALE:
In air freight, according to para. 3.2.1.2.3.3.7.5, the action occurs after
manifest preparation and cargo departure. In surface freight, according to
para. 3.2.1.2.4.3.20, the action is prompted by the entry of the departure
date and time on the movement document.

DISPOSITION: ACCEPT [ ]   REJECT [ ]

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DATA ITEM DISCREPANCY WORKSHEET

CDRL NUMBER: A001-03   DATE: 12/31/89

ORIGINATOR NAME: Gerald T. Love   OFFICE SYMBOL: SAIC

TELEPHONE NUMBER: 272-2999

SUBSTANTIVE: X   EDITORIAL:

PAGE NUMBER: 43   PARA. NUMBER: 3.2.1.2.3.3.7.5

COMMENT OR RECOMMENDED CHANGE:
The air manifest process does not mention the Advance Shipment Notices and
REPSHIPs.

RATIONALE:
These are included in the surface freight discussion of final movement
document handling (para. 3.2.1.2.4.3.20) and should be included for air
freight.

DISPOSITION: ACCEPT [ ]   REJECT [ ]

DATA ITEM DISCREPANCY WORKSHEET

CDRL NUMBER: A001-03   DATE: 12/01/89

ORIGINATOR NAME: Gerald T. Love   OFFICE SYMBOL: SAIC

TELEPHONE NUMBER: 272-2999

SUBSTANTIVE: X   EDITORIAL:

PAGE NUMBER: 46   PARA. NUMBER: None

COMMENT OR RECOMMENDED CHANGE:
Recommend adding a paragraph dealing with over and short procedures.

RATIONALE:
Over and short shipments are discussed extensively in air freight (para.
3.2.1.2.3.2.9).   Surface freight should employ similar steps.

DISPOSITION: ACCEPT [ ]   REJECT [ ]

DATA ITEM DISCREPANCY WORKSHEET

CDRL NUMBER: A001-03   DATE: 12/01/89

ORIGINATOR NAME: Gerald T. Love   OFFICE SYMBOL: SAIC

TELEPHONE NUMBER: 272-2999

SUBSTANTIVE: X   EDITORIAL:

PAGE NUMBER: 49   PARA. NUMBER: 3.2.1.2.4.3.12

COMMENT OR RECOMMENDED CHANGE:
There are no plans to produce movement documents for shipments made by small
package carriers. However, the last sentence in this paragraph refers to
specific movement documents that will accompany these shipments. Delete the
last sentence.

RATIONALE:
The first and last sentence conflict with one another.

DISPOSITION: ACCEPT [ ] REJECT [ ]

ORIGINATOR CONTROL NUMBER: SSS-0016
TECH OFFICE CONTROL NUMBER:

DATA ITEM DISCREPANCY WORKSHEET

CDRL NUMBER: A001-03   DATE: 12/01/89

ORIGINATOR NAME: Gerald T. Love   OFFICE SYMBOL: SAIC

TELEPHONE NUMBER: 272-2999

SUBSTANTIVE: X   EDITORIAL:

PAGE NUMBER: 49   PARA. NUMBER: 3.2.2.4.3.13(a)

COMMENT OR RECOMMENDED CHANGE:
The responsibility for manually entering MTMC responses to CMOS DRO requests
should reside with shipment planning instead of surface freight. Moreover,
the reference paragraph deals with movement documents, not DROs.

RATIONALE:
The shipment planning function will assemble cargo for inclusion under a DRO;
therefore, it seems logical for this function to enter DRO updates.

DISPOSITION: ACCEPT [ ] REJECT [ ]

DATA ITEM DISCREPANCY WORKSHEET

CDRL NUMBER: A001-03   DATE: 12/01/89

ORIGINATOR NAME: Gerald T. Love   OFFICE SYMBOL: SAIC

TELEPHONE NUMBER: 272-2999

SUBSTANTIVE: X   EDITORIAL:

PAGE NUMBER: 51   PARA. NUMBER: 3.2.1.2.4.3.20c and d.

COMMENT OR RECOMMENDED CHANGE:
The inclusion of "other CMOS locations" is incorrect.

RATIONALE:
The Advance Shipment Notices and REPSHIPs in these references pertain to
shipments destined for Stock Control and Distribution System only.

DISPOSITION: ACCEPT [ ]   REJECT [ ]

DATA ITEM DISCREPANCY WORKSHEET

CDRL NUMBER: A001-03   DATE: 12/01/89

ORIGINATOR NAME: Gerald T. Love   OFFICE SYMBOL: SAIC

TELEPHONE NUMBER: 272-2999

SUBSTANTIVE: X   EDITORIAL:

PAGE NUMBER: 53   PARA. NUMBER: 3.2.2b
             34   3.2.1.2.1.3.14

COMMENT OR RECOMMENDED CHANGE:
The first reference raises two points: (1) In line 8, the term `user
completes processing` is unnecessarily vague and contradictory to procedures
explained in para. 3.2.1.1.3.1, line 35. In the Database procedures section,
database updates are timed to occur as the `local function completes a logical
transaction. In other words, the update of the central database shall be on a
transaction-by-transaction basis, rather than keystroke-for-keystroke basis.`
(2) Para. 3.2.2b, line 11, states that after information is entered into the
central database other users may retrieve the data. According to para.
3.2.1.2.1.3.14, when packing and crating finishes with a shipment, the record
is sent to the central database and to the shipping function's workstation.

RATIONALE:
(1) The definition of a database update should be consistent regardless of
which functional workstation enters the information. (2) The issue of making
the most current data available in the central data base for users to pull
down versus sending it automatically to the appropriate function will remain
ambiguous if a standard approach is not adopted.

DISPOSITION: ACCEPT [ ] REJECT [ ]

DATA ITEM DISCREPANCY WORKSHEET

CDRL NUMBER: A001-03   DATE: 12/01/89

ORIGINATOR NAME: Gerald T. Love   OFFICE SYMBOL: SAIC

TELEPHONE NUMBER: 272-2999

SUBSTANTIVE: X   EDITORIAL:

PAGE NUMBER: 54   PARA. NUMBER: 3.2.4

COMMENT OR RECOMMENDED CHANGE:
The list of HWCIs should be condensed from six to three. Delete a., e., and f.

RATIONALE:
This change will bring the SSS into alignment with the SSDD and SRS.

DISPOSITION: ACCEPT [ ] REJECT [ ]

DATA ITEM DISCREPANCY WORKSHEET

CDRL NUMBER: A001-03   DATE: 12/01/89

ORIGINATOR NAME: Gerald T. Love   OFFICE SYMBOL: SAIC

TELEPHONE NUMBER: 272-2999

SUBSTANTIVE: EDITORIAL: X

PAGE NUMBER: 54   PARA. NUMBER: 3.2.4.1

COMMENT OR RECOMMENDED CHANGE:
Change "Source" to "Supply"

RATIONALE:
N/A

DISPOSITION: ACCEPT [ ]   REJECT [ ]

DATA ITEM DISCREPANCY WORKSHEET

CDRL NUMBER: A001-03   DATE: 12/01/89

ORIGINATOR NAME: Gerald T. Love   OFFICE SYMBOL: SAIC

TELEPHONE NUMBER: 272-2999

SUBSTANTIVE: X   EDITORIAL:

PAGE NUMBER: 59   PARA. NUMBER: 3.2.5.1.

COMMENT OR RECOMMENDED CHANGE:
Reliability requirements should be addressed in quantitative terms.

RATIONALE:
Does not comply with DI-CMAN-8008A, para. 10.1.5.2.5.1.

DISPOSITION: ACCEPT [ ]   REJECT [ ]

DATA ITEM DISCREPANCY WORKSHEET

CDRL NUMBER: A001-03   DATE: 12/01/89

ORIGINATOR NAME: Gerald T. Love   OFFICE SYMBOL: SAIC

TELEPHONE NUMBER: 272-2999

SUBSTANTIVE: X   EDITORIAL:

PAGE NUMBER: 59   PARA. NUMBER: 3.2.5.2

COMMENT OR RECOMMENDED CHANGE:
Maintainability requirements for software should be addressed in quantitative terms.

RATIONALE:
Does not comply with DI-CMAN-8008A, para. 10.1.5.2.5.2.

DISPOSITION: ACCEPT [ ] REJECT [ ]

ORIGINATOR CONTROL NUMBER. SSS-0023
TECH OFFICE CONTROL NUMBER:

DATA ITEM DISCREPANCY WORKSHEET

CDRL NUMBER: A001-03   DATE: 12/01/89

ORIGINATOR NAME: Gerald T. Love   OFFICE SYMBOL: SAIC

TELEPHONE NUMBER: 272-2999

SUBSTANTIVE: EDITORIAL: X

PAGE NUMBER: 64   PARA. NUMBER: 3.2.8

COMMENT OR RECOMMENDED CHANGE:
In line 10 change "hierarchal" to "hierarchical."

RATIONALE:
N/A

DISPOSITION: ACCEPT [ ]   REJECT [ ]

DATA ITEM DISCREPANCY WORKSHEET

CDRL NUMBER: A001-03   DATE: 12/01/89

ORIGINATOR NAME: Gerald T. Love   OFFICE SYMBOL: SAIC

TELEPHONE NUMBER: 272-2999

SUBSTANTIVE: X   EDITORIAL:

PAGE NUMBER: 83   PARA. NUMBER: 5

COMMENT OR RECOMMENDED CHANGE:
An explanation should be given why this paragraph does not apply to CMOS. If
the strategy for delivery is not yet developed, an explanation could be
inserted here. However, the DID calls for this paragraph to be completed.

RATIONALE:
The system, including the software and hardware, will have to be packaged and
delivered to the CMOS sites.

DISPOSITION: ACCEPT [ ] REJECT [ ]